Section 1. Identification

GHS product identifier: TempSpan® Temporary Crown and Bridge Material - Base
Other means of identification: Not available.
Product type: Paste.

Relevant identified uses of the substance or mixture and uses advised against
Product use: Dental product (Kit)
Area of application: Professional applications.

Manufacturer: Pentron Clinical
1717 West Collins Avenue
Orange, CA 92867-5422
Telephone no.: 1-203-265-7397, Toll Free: 1-800-551-0283

e-mail address of person responsible for this SDS: edwin.varela@kavokerrgroup.com

Emergency telephone number (with hours of operation): CHEMTREC® (24 hours) U.S.: 1-800-424-9300 International: +1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Health effects are based on the uncured material.

Classification of the substance or mixture: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 98.8%

GHS label elements
Hazard pictograms: 

Signal word: Warning
Hazard statements: Causes serious eye irritation.
May cause respiratory irritation.

Precautionary statements
Prevention: Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling.

Response: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Section 2. Hazards identification

- Storage: Store locked up.
- Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified: None known.

Section 3. Composition/information on ingredients

- Substance/mixture: Mixture
- Other means of identification: Not available.

**CAS number/other identifiers**

- CAS number: Not applicable.
- Product code: Not available.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Other names</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals Poly(oxo-1,2-ethanediyl), α,α'-(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-</td>
<td>glass, oxide, chemicals Not available.</td>
<td>30 - 60</td>
<td>65997-17-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 - 60</td>
<td>41637-38-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

**Description of necessary first aid measures**

- **Eye contact**: No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
- **Inhalation**: No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
- **Skin contact**: No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.
- **Ingestion**: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

- **Eye contact**: Causes serious eye irritation.
- **Inhalation**: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: Irritating to mouth, throat and stomach.

**Over-exposure signs/symptoms**

- **Eye contact**: Adverse symptoms may include the following: pain or irritation watering redness

Date of issue/Date of revision: 05/05/2014  Date of previous issue: No previous validation  Version: 1

United States
Section 4. First aid measures

**Inhalation**: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

**Skin contact**: No specific data.

**Ingestion**: No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician**: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**: In case of fire, use water, dry chemical powder or carbon dioxide.

**Unsuitable extinguishing media**: Do not use water jet.

**Specific hazards arising from the chemical**

**Hazardous thermal decomposition products**: No specific fire or explosion hazard.

**Special protective actions for fire-fighters**: In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely.

**For emergency responders**: Low release. See also the information in "For non-emergency personnel".

**Environmental precautions**: Low release. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods and materials for containment and cleaning up**

**Small spill**: Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.
Section 6. Accidental release measures

Large spill:
Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:
No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.

Advice on general occupational hygiene:
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities:
Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>NIOSH REL (United States, 10/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 3 f/cc 10 hours. Form: Fibers of spec length</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 10 hours. Form: Total</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (United States, 6/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 1 f/cc 8 hours. Form: Respirable fibers: length greater than 5 uM; aspect</td>
</tr>
<tr>
<td></td>
<td>ratio equal to or greater than 3:1 as determined by the membrane filter method</td>
</tr>
<tr>
<td></td>
<td>at 400-450X magnification (4-mm objective) phase contrast illumination.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls:
No special measures are required for small quantities under normal and intended conditions of product use.

Environmental exposure controls:
No special measures are required for small quantities under normal and intended conditions of product use.

Individual protection measures

Hygiene measures:
No special measures are required for small quantities under normal and intended conditions of product use.

Eye/face protection:
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection:

Date of issue/Date of revision: 05/05/2014  Date of previous issue: No previous validation  Version: 1
Section 8. Exposure controls/personal protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: No special measures are required for small quantities under normal and intended conditions of product use.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: No special measures are required for small quantities under normal and intended conditions of product use.

Section 9. Physical and chemical properties

Appearance
Physical state: Solid. [Paste.]
Color: Various
Odor: Fruity.
Odor threshold: Not available.
pH: Not applicable.
Melting point: Not available.
Boiling point: Not available.
Flash point: Not available.
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits: Not available.

Vapor pressure: Not available.
Vapor density: Not available.
Relative density: Not available.
Solubility: Very slightly soluble in the following materials: cold water and hot water.
Solubility in water: Not available.
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
SADT: Not available.
Viscosity: Not available.
Density: 1.4 g/cm³

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Under normal conditions of storage and use, hazardous polymerization will not occur.
Section 10. Stability and reactivity

Conditions to avoid : Protect from sunlight. Initiators. Avoid excessive heat.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and reducing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity
Not available.

Conclusion/Summary : Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

Irritation/Corrosion
Not available.

Conclusion/Summary

Skin : Based on the criteria of the protocol, this product is considered a negligible irritant per ISO 10993-10.

Sensitization
Not available.

Conclusion/Summary

Skin : Kligman score: Grade I (weak sensitizer)

Mutagenicity
Not available.

Carcinogenicity
Not available.

Classification

Product/ingredient name | OSHA | IARC | NTP
--- | --- | --- | ---
glass, oxide, chemicals | - | 3 | -

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α,α’-[(1-methylene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.
Section 11. Toxicological information

Information on the likely routes of exposure

Potential acute health effects

Eye contact: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Inhalation: Causes serious eye irritation.

Skin contact: No known significant effects or critical hazards.

Ingestion: Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:
- pain or irritation
- watering
- redness

Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

Skin contact: No specific data.

Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects

Not available.

Numerical measures of toxicity

Acute toxicity estimates

Not available.
Section 12. Ecological information

Toxicity
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α,α':[(1-methylethylidene)di-4,1-phenylene]bis[u-((2-methyl-1-oxo-2-propen-1-yl)oxy)-]</td>
<td>3.43 to 5.62</td>
<td>-</td>
<td>high</td>
</tr>
</tbody>
</table>

Mobility in soil
Soil/water partition coefficient (K<sub>oc</sub>)
Not available.

Other adverse effects
No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14. Transport information

<table>
<thead>
<tr>
<th></th>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user
Transplant within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not available.

Date of issue/Date of revision: 05/05/2014
Date of previous issue: No previous validation
Version: 1

United States
Section 15. Regulatory information

U.S. Federal regulations

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)

Section 602 Class I Substances

Section 602 Class II Substances

DEA List I Chemicals (Precursor Chemicals)

DEA List II Chemicals (Essential Chemicals)

SARA 302/304
Composition/information on ingredients

No products were found.

SARA 304 RQ

Not applicable.

SARA 311/312
Classification
Immediate (acute) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 - 60</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

Not applicable.

State regulations

Massachusetts

The following components are listed: MINERAL WOOL FIBER

New York

None of the components are listed.

New Jersey

None of the components are listed.

Pennsylvania

None of the components are listed.

California Prop. 65

None of the components are listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 05/05/2014
Date of previous issue: No previous validation
Version: 1

United States
Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Flammability
Health 2 0
Instability/Reactivity
Special

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History
Date of issue/Date of revision : 05/05/2014
Date of previous issue : No previous validation
Version : 1
Prepared by : IHS

Key to abbreviations
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

References
HCS (U.S.A.)- Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
SAFETY DATA SHEET
TempSpan® Temporary Crown and Bridge Material - Catalyst

Section 1. Identification

GHS product identifier : TempSpan® Temporary Crown and Bridge Material - Catalyst
Other means of identification : Not available.
Product type : Paste.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Dental product (Kit)
Area of application : Professional applications.

Manufacturer : Pentron Clinical
1717 West Collins Avenue
Orange, CA 92867-5422
Telephone no.: 1-203-265-7397, Toll Free: 1-800-551-0283

e-mail address of person responsible for this SDS : edwin.varela@kavokerrgroup.com

Emergency telephone number (with hours of operation) : CHEMTREC® (24 hours) U.S. : 1-800-424-9300  International: +1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Health effects are based on the uncured material.

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 98.3%

GHS label elements

Hazard pictograms : ![Warning symbol]

Signal word : Warning
Hazard statements : Causes serious eye irritation.
May cause respiratory irritation.

Precautionary statements

Prevention : Wear eye or face protection. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Section 2. Hazards identification

Storage: Store locked up.
Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified: None known.

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
<tr>
<td>CAS number/other identifiers</td>
<td></td>
</tr>
<tr>
<td>CAS number</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Product code</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Other names</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>glass, oxide, chemicals</td>
<td>60 - 100</td>
<td>65997-17-3</td>
</tr>
<tr>
<td>1,6-hexanediyl bismethacrylate</td>
<td>1,6-hexanediyl bismethacrylate</td>
<td>7 - 13</td>
<td>6606-59-3</td>
</tr>
<tr>
<td>dibenzoyl peroxide</td>
<td>dibenzoyl peroxide</td>
<td>1 - 5</td>
<td>94-36-0</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
Inhalation: No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Skin contact: No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.
Ingestion: Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.
Inhalation: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: No known significant effects or critical hazards.
Ingestion: Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following: pain or irritation watering redness
Section 4. First aid measures

Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

Skin contact: No specific data.

Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders: In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media
- Suitable extinguishing media: In case of fire, use water, dry chemical powder or carbon dioxide.
- Unsuitable extinguishing media: Do not use water jet.

Specific hazards arising from the chemical: No specific fire or explosion hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- metal oxide/oxides

Special protective actions for fire-fighters: In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
- For non-emergency personnel: Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely.
- For emergency responders: Low release. See also the information in "For non-emergency personnel".

Environmental precautions: Low release. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up
- Small spill: Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Date of issue/Date of revision: 05/05/2014  Date of previous issue: No previous validation  Version: 1 3/11

United States
Section 6. Accidental release measures

Large spill: Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose in a safe manner.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Ingredient name | Exposure limits
---|---
glass, oxide, chemicals | NIOSH REL (United States, 10/2013). TWA: 3 f/cc 10 hours. Form: Fibers of spec length. TWA: 5 mg/m³ 10 hours. Form: Total ACGIH TLV (United States, 6/2013). TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction. TWA: 1 f/cc 8 hours. Form: Respirable fibers: length greater than 5 μM; aspect ratio equal to or greater than 3:1 as determined by the membrane filter method at 400-450X magnification (4-mm objective) phase contrast illumination.
dibenzoyl peroxide | ACGIH TLV (United States, 6/2013). TWA: 5 mg/m³ 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. NIOSH REL (United States, 10/2013). TWA: 5 mg/m³ 10 hours. OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours.

Appropriate engineering controls: No special measures are required for small quantities under normal and intended conditions of product use.

Environmental exposure controls: No special measures are required for small quantities under normal and intended conditions of product use.

Individual protection measures

Date of issue/Date of revision: 05/05/2014 Date of previous issue: No previous validation Version: 1

United States
Section 8. Exposure controls/personal protection

**Hygiene measures**
No special measures are required for small quantities under normal and intended conditions of product use.

**Eye/face protection**
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin protection**

- **Hand protection**
  Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

- **Body protection**
  No special measures are required for small quantities under normal and intended conditions of product use.

- **Other skin protection**
  Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

- **Respiratory protection**
  No special measures are required for small quantities under normal and intended conditions of product use.

Section 9. Physical and chemical properties

**Appearance**

- **Physical state**
  Solid. [Paste.]

- **Color**
  Various

- **Odor**
  Fruity.

- **Odor threshold**
  Not available.

- **pH**
  Not applicable.

- **Melting point**
  Not available.

- **Boiling point**
  Not available.

- **Flash point**
  Not available.

- **Evaporation rate**
  Not available.

- **Flammability (solid, gas)**
  Not available.

- **Lower and upper explosive (flammable) limits**
  Not available.

- **Vapor pressure**
  Not available.

- **Vapor density**
  Not available.

- **Relative density**
  Not available.

- **Solubility**
  Very slightly soluble in the following materials: cold water and hot water.

- **Solubility in water**
  Not available.

- **Partition coefficient: n-octanol/water**
  Not available.

- **Auto-ignition temperature**
  Not available.

- **Decomposition temperature**
  Not available.

- **SADT**
  Not available.

- **Viscosity**
  Not available.

- **Density**
  1.4 g/cm³
Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid: Protect from sunlight. Initiators. Avoid excessive heat.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials and reducing materials.
Amines

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibenzoyl peroxide</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>6400 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary: Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibenzoyl peroxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin: Based on the criteria of the protocol, this product is considered a negligible irritant per ISO 10993-10.

Sensitization

Not available.

Conclusion/Summary

Skin: Kligman score: Grade I (weak sensitizer)

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>dibenzoyl peroxide</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity

Not available.

Date of issue/Date of revision: 05/05/2014
Date of previous issue: No previous validation
Version: 1

United States
Section 11. Toxicological information

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>1,6-hexanediyl bismethacrylate</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects
Eye contact: Causes serious eye irritation.
Inhalation: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: No known significant effects or critical hazards.
Ingestion: Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics
Eye contact: Adverse symptoms may include the following:
- pain or irritation
- watering
- redness
Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing
Skin contact: No specific data.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects
Not available.

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.

Date of issue/Date of revision: 05/05/2014
Date of previous issue: No previous validation
Version: 1
Section 11. Toxicological information

Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>dibenzoyl peroxide</td>
<td>3.2</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision : 05/05/2014
Date of previous issue : No previous validation
Version : 1
Section 14. Transport information

Additional information: -

Special precautions for user: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations: United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Listed

Clean Air Act Section 602 Class I Substances: Not listed

Clean Air Act Section 602 Class II Substances: Not listed

DEA List I Chemicals (Precursor Chemicals): Not listed

DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients: No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312
Classification: Immediate (acute) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass, oxide, chemicals</td>
<td>60 - 100</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>1,6-hexanediyl bismethacrylate</td>
<td>7 - 13</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>dibenzoyl peroxide</td>
<td>1 - 5</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>dibenzoyl peroxide</td>
<td>94-36-0</td>
</tr>
<tr>
<td>Supplier notification</td>
<td>dibenzoyl peroxide</td>
<td>94-36-0</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: MINERAL WOOL FIBER; BENZOYLPEROXIDE

New York: None of the components are listed.

Date of issue/Date of revision: 05/05/2014
Date of previous issue: No previous validation
Version: 1

United States
Section 15. Regulatory information

New Jersey : The following components are listed: BENZOYL PEROXIDE; DIBENZOYL PEROXIDE
Pennsylvania : The following components are listed: PEROXIDE, DIBENZOYL
California Prop. 65
None of the components are listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited numbers of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History
Date of issue/Date of revision : 05/05/2014
Date of previous issue : No previous validation
Version : 1
Prepared by : IHS
Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

References : HCS (U.S.A.)- Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Date of issue/Date of revision : 05/05/2014 Date of previous issue : No previous validation Version : 1 10/11
Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.